

Category 1 (Foundational/Regional) Project Final Report

Report Completion Date:

Section 1: Project Information

Project Information	
Control #:	GMLC 1.2.3
Title:	Testing Network and Open Library
Project Title:	Testing Network and Open Library
Project PI Name and Lab Affiliation:	Matthew Lave, Sandia National Labs
Project Co-PI (plus-one) and Lab Affiliation:	Anudeep Medam, Idaho National Lab
DOE Project Manager(s):	Lee Slezak, Kerry Cheung
Period of Performance:	April 15, 2016 – December 31, 2019
Date Closed:	December 31, 2019

Section 2: Project Assessment and Checklist

Project Assessment and Checklist	Y/N	Confirmation Date	Comments
Have all quarterly reports been submitted?	Y	12/31/2019	Quarterly reports have been submitted as requested
Have all milestones have been delivered?	Y	12/31/2019	All milestones completed
Are all products finalized (e.g. technical reports, journal articles)?	Y	12/31/2019	Technical reports delivered to technical monitors
Have all project products been finalized and presented/submitted to DOE Project Manager(s) and/or GMI Leadership?	Y	12/31/2019	Technical reports delivered to technical monitors
Have all potential sensitivities been identified and addressed with DOE Project Managers and/or GMI Leadership?	Y	12/31/2019	No sensitivities identified
Has the project team received feedback from Project Stakeholders (e.g. advisory group)?	Y	12/31/2019	Feedback received through outreach in Fall 2019
Are there any open or pending costs?	N	12/31/2019	All funds spent

Section 3: Outcomes, Deliverables, Publications

Provide the following:

**In addition to titles, provide links to any websites or other repositories where deliverables and/or other information will be available after the project has been completed*

**Publications available for public release, URLs, etc. listed here should be uploaded to GMLC Open Point*

1. List of Outcomes:

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- a. Creation of gridPULSE (Public User Library for Systems Evaluation) as a web-based resource (originally <http://gridmodtools.org>, transitioning to <http://openlibrary.inl.org>) for understanding grid-related testing and modeling capabilities
 - b. Implementation of the Testing Network (TN) as a comprehensive catalog of testing capabilities available at the national labs.
 - c. Development of the Open Library (OL) as a public repository for component and system models, data sets, and testing procedures.
- 2. List of Deliverables:**
- a. TN established through data on a website (Q4 FY 17)
 - b. OL published and populated and same website as TN (Q1 FY18)
 - c. Launch an agreement-based association for TN and OL – became gridPULSE (Q2 FY18)
 - d. Updated content of TN and OL (Q2 FY19)
 - e. Sustainability plan drafted and vetted with stakeholders (Q1 FY20)
- 3. List of Publications:**
- a. “Grid Modernization Laboratory Consortium Testing Network (GMLC 1.2.3),” talk presented at IAPG Electrical Systems Working Group Meeting, Dayton, OH, March 2018, (<https://www.osti.gov/servlets/purl/1506192>),
 - b. “gridPULSE: Catalog of National Laboratory Testing Resources for Grid Devices,” published electronically, March 2018 (<https://www.osti.gov/biblio/1528814-gridpulse-catalog-national-laboratory-testing-resources-grid-devices>).
 - c. gridPULSE website: originally <http://gridmodtools.org> (March 2018); transitioning to <http://openlibrary.inl.org> (December 2019)
 - d. “gridPULSE: Public User Library for Systems Evaluation to Accelerate Grid Modernization,” poster presented at IEEE 7th World Conference on Photovoltaic Energy Conversion, June 2018, (<https://ieeexplore.ieee.org/document/8547427>).
 - e. “gridPULSE Sustainability Plan and Options,” share with technical monitors December 2019 (available upon request).
- 4. List of Awards or Recognition:**
- a. N/A
- 5. List any ROIs – Software, Intellectual Property, Licensing, Patents, Etc.**
- a. N/A

Section 4: Final Costing

Each Lab Financial POC Completes Final Costing of GMLC Projects for their lab. PIs, Lab Leads will need to assist but not required to report financials with this final report.

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Section 5: Final Thoughts/Comments

Final Thoughts	Comments
Lessons Learned	<p>Vast testing and modeling capabilities exist within the National Labs, and this project helped to better understand and publicize those capabilities. The team’s diverse expertise and National Labs affiliations (10 Labs represented in first year) were extremely valuable in obtaining and curating the information necessary to create the testing network and open library.</p>
Opportunities for Improvement	<p>Due to the many team members, some team members had small roles and were not as actively involved. Better delegation and specific task assignments might have resulted in more team engagement.</p>
<p>Future Projects: Ideas for future work? Possible next steps and research direction?</p>	<p>Opportunities for follow-on work include adapting the Testing Network and Open Library to better meet user needs by simplifying the presentation of information, identifying capabilities and models that can be used in a complementary fashion, and by easing the way in which users can interact with National Lab test facility operators and model creators. Continued expansion and ongoing maintenance of the Testing Network and Open Library to include newly-created or newly-improved test facilities and models is also needed to keep their value as relevant, up-to-date resources.</p>
Other:	